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IN RE APPLICATION OF:

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FOR: COMPOSITION USEFUL FOR THE OXIDATION  
DYEING OF HUMAN KERATINOUS FIBRES

DECLARATION UNDER 37 C.F.R. 1.132

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

I, Nanci-Pascal Audouin, hereby declare:

1. I am employed by L'ORÉAL as an engineer and have experience in the field of preparing and analyzing compositions for coloring hair.
2. The following experiments were carried out by me or under my direct supervision and control.
3. The following compositions were prepared.

Ingredient	Invention	Comparative	Comparative
	Composition A	Composition B	Composition C
Simet A P (sodium metasilicate)	2	---	2
Portil A (sodium	---	2	---

silicate)			
Monoethanolamine	4.25	4.25	---
Aqueous ammonia	---	---	4.25
Erythorbic Acid	0.3	0.3	0.3
Sodium metabisulfite	0.7	0.7	0.7
Diethylenetriamine pentacetic acid, pentasodic salt (40% aqueous solution)	2	2	2
Glycol distearate	2	2	2
1-hydroxy-4- aminobenzene	0.48	0.48	0.48
1-hydroxy-3- aminobenzene	0.053	0.053	0.053
N-oleyl dihydrosphingosine	0.01	0.01	0.01
Resorcinol	0.68	0.68	0.68
6-hydroxyindole	0.06	0.06	0.06
1-methyl-2-hydroxy-4- aminobenzene	0.09	0.09	0.09
1-beta- hydroxyethyloxy-2,4- diaminobenzene.2HCl	0.063	0.063	0.063
1-methyl-2-hydroxy-4-	0.09	0.09	0.09

beta-hydroxyethyl aminobenzene			
1-methyl-2,5- diaminobenzene	0.57	0.57	0.57
Titanium dioxide – iron oxides	0.18	0.18	0.18
Mica coated with titanium dioxide	0.15	0.15	0.15
Hydrophobic pyrogenated silica	1.2	1.2	1.2
Lauric acid soap	4.2	4.2	4.2
Oxyethylenated lauric alcohol (12EO)	7	7	7
Oxyethylenated decylic alcohol (3EO)	10	10	10
Oxyethylenated oleocetylic alcohol (30EO)	4	4	4
Cetylstearyl alcohol (C16-18 – 50/50)	11.5	11.5	11.5
Perfume	0.8	0.8	0.8
Carbopol 980 (carboxyvinyl polymer)	0.4	0.4	0.4
Merquat 100	6	6	6

(polydimethyldiallyl Ammonium chloride)			
Mexomere PO (polycondensate of tetramethyl hexamethylenediamine/ Dichloro 1,3- propylene)	2	2	2
Propylene glycol	10	10	10
Water	Qs	Qs	Qs

These compositions were virtually identical except for the presence of sodium metasilicate, sodium silicate, ethanolamine and ammonia. Invention Composition A contains sodium metasilicate and ethanolamine. Comparative Composition B contains sodium silicate and ethanolamine. Comparative Composition C contains sodium metasilicate and ammonia.

4. Each composition was mixed with an oxidizing composition containing 4.5% hydrogen peroxide in a ratio of 1 : 1.5. After mixing, the combined composition was applied to (a) locks of natural hair with 90% white hair; and (b) locks of highly sensitive hair for 20 minutes at a temperature of 20°C. After application, the locks were washed with a standard shampoo, rinsed again, and dried.

5. The homogeneity of the resulting color on the hair samples was then determined by determining selectivity using the CIELAB L\*a\*b\* system using a DATA COLOR SF600X colorimeter. Specifically, selectivity was calculated to be the square root of the following formula:

$$(L^*_0 - L^*_1)^2 + (a^*_0 - a^*_1)^2 + (b^*_0 - b^*_1)^2$$

where  $L^*_0$ ,  $a^*_0$ , and  $b^*_0$  are coordinates associated with natural hair and  $L^*_1$ ,  $a^*_1$ , and  $b^*_1$  are coordinates of the highly sensitive hair. The lower the selectivity value, the more homogeneous the resulting color is.

6. The selectivity values were calculated to be as follows:

Composition	Selectivity	Variation of selectivity
A	8.78	---
B	11.12	2.34
C	12.85	4.07

Thus, a significant difference in color homogeneity existed between the Invention Composition A and both Comparative Compositions. This vast difference in color homogeneity properties was surprising and unexpected given the similarity of the compositions tested.

7. The improved color homogeneity properties obtained with the claimed combination of a metasilicate and an alkanolamine are representative of the present invention. That is, based on the above experiments, specifically, and my laboratory experience, generally, I would expect compositions containing, in a cosmetically acceptable medium comprising water and having a basic pH, at least one oxidation dye and an alkalinizing agent, wherein the alkalinizing agent comprises at least one metasilicate selected from the group consisting of alkali metal, alkaline-earth metal or ammonium metasilicates and at least one alkanolamine, to possess improved color homogeneity properties like those of the exemplified invention composition. I have no reason to expect otherwise.

8. The difference in color homogeneity properties between the invention composition and the comparative compositions demonstrates the surprising and unexpected benefit derived

from having the claimed combination of a metasilicate and an alkanolamine in the invention compositions.

9. The improved color homogeneity properties associated with the invention compositions are commercially significant. Clearly, hair coloring products which provide more homogeneous coloring on hair are more commercially viable than compositions which provide less homogeneous coloring.

10. The undersigned petitioner declares further that all statements made herein of her own knowledge are true and that all statements made on information and belief are believe to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

11. Further deponent sayeth not.

M. D. Duxett Marie - Pascale  
Name

M. D. Duxett  
Signature

30.03.07  
Date